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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,936	12/01/2000	Jie Yan	154616.1/MCS-051-00	2817
27662	7590	03/05/2004	EXAMINER	
LYON & HARR, LLP 300 ESPLANADE DRIVE, SUITE 800 OXNARD, CA 93036			BALI, VIKKRAM	
			ART UNIT	PAPER NUMBER

2623

DATE MAILED: 03/05/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/728,936

Applicant(s)

YAN ET AL.

Examiner

Vikkram Bali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/12/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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DETAILED ACTION

In response to the amendment filed on 1/12/2004, all the amendments to the specification and claims have been entered, the rejection under 35 USC 112 is withdrawn in view of the amendments to the claims 11 and 17, and action follows:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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3. Claims 1-11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deformable model based generation of realistic 3D specific human face, by Yan et al. in view of Kung et al (US 5850470).

With respect to the claims 1-11 and 16 the rejections are maintained and incorporated by references as set forth in the prior office action paper # 5.

4. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Yan et al. in view of Kung et al (US 5850470) as applied to claim 3 above, and further in view of Deering (US 6525723).

With respect to the claims 12-15 the rejections are maintained and incorporated by references as set forth in the prior office action paper # 5.

5. Claim 17 as best understood is rejected under 35 U.S.C. 103(a) as being unpatentable over by Yan et al. in view of Kung et al (US 5850470) as applied to claim 1 above, and further in view of Illumination based image synthesis, by Georgiades, June 1999.

With respect to the claim 17 the rejections are maintained and incorporated by references as set forth in the prior office action paper # 5.

Response to Arguments

6. Applicant's arguments filed 1/12/2004 have been fully considered but they are not persuasive.

Arguments regarding claims 1-11 and 16

I Applicant argue that the reference **Yan fails** to disclose the following features:

- a) **no spline smoothing is taught**, (page 12 paragraph 2)
- b) **training of a 3D face recognizer**, (page 12, paragraph 2)
- c) **any mention use of splines**, (page 12, last 2 lines)

The limitation a) is not recited in claim 1. therefore, it is presumed by the examiner that the primary reference of Yan does disclose the invention as describe in the rejection of claim 1.

Examiner noted that the limitation a) is claimed in claim 2. And, the spline process, is simply used to smooth the images, and as disclosed by the reference Yan in col. 2, of page 857, lines of 6-32, the procedure use to model the 3D human face does use the plastic-visco-elastic behavior of the facial skin i.e. a spline surface construction, as claimed, also, this is done by Bezier patches as disclose in the instant application and as well describe in the reference Yan col. 2 section 5 on page 859.

With the regards to the limitation b) the limitation is taught by the teaching reference Kung, see col. 4, lines 5-13, wherein the lines 10-11 specifically calls for a face database 16 is used to train the face detector.

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With respect to the limitation c) Yan's teaching uses function that is used to approximate a given function, and is composed of pieces of simple functions defined on subintervals and joined at their end points with a suitable degree of smoothness (deformation algorithm).

II Applicant argues that the reference **Kung fails** to disclose the following features:

- a) **no use of a synthesized database to train a face recognizer**, (page 13 paragraph 1)
- b) **no mention of spline**, (page 12, paragraph 2)
- c) **requires the use of many input images to form his database** (page 13, paragraph 1)

With the regards to the limitation a) the limitation is disclose by the primary reference Yan, synthesizing various face pose images, see page 857, col. 2, lines 17-32, the images are synthesize and calls for using the manipulating polygonal mesh of human face model and further smoothing the images using the plastic visco elastic behavior of the facial skin i.e. "synthesizing various face pose images".

The limitation b) is not taught in claim 1. Therefore, it is presumed by the examiner that the primary reference of Yan does disclose the invention as describe in the rejection of claim 1.

Examiner noted that the limitation b) is claimed in claim 2. And, the spline process, is simply use to smooth the images, and as disclose by the reference Yan in

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col. 2, of page 857, lines of 6-32, the procedure used to model the 3D human face does use the plastic-visco-elastic behavior of the facial skin i.e. a spline surface construction, as claimed, also, this is done by Bezier patches as disclose in the instant application and as well describe in the reference Yan col. 2 section 5 on page 859.

With respect to limitation c) applicants call that Kung requires the use of many input images to form his database, well as per the claimed limitation of claim 1, "synthesizing various face pose images" the reference does teach the limitation of the claim 1. Therefore, the limitation of the claim 1 meet by the reference.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Also, in response to the applicants' arguments of not having any suggestion in the reference, examiner disagrees and would like to point out all the explanation above (in section I and II) regarding the claimed limitations, specifically the suggestion of spline. Reference Yan does suggests use of spline (see section I and II above).

Arguments regarding claims 12-15 and 17

Applicant argues that Yan, Kung and Deering fail to disclose:

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a) training of a recognition system that recognizes a person based on a **single image** by employing this image **to generate** a synthesized database, (page 15 and 16 paragraph 2).

Examiner disagrees the specifics as detailed in the remarks for the arguments in rejection of claims 12-15 and 17 are more specific than the claimed limitations. The limitation of training by using a **single image** is not claimed in the claims. The claim 1, claims the limitation of 'various face pose images' i.e. more than one or a image that is disclosed by the reference Yan see figure 6, wherein three poses of a subject is taken and synthesized.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

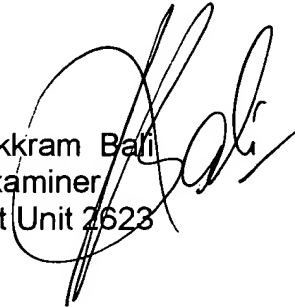
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 703.305.4510. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703.308.6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vikkram Bali
Examiner
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vb
March 4, 2004